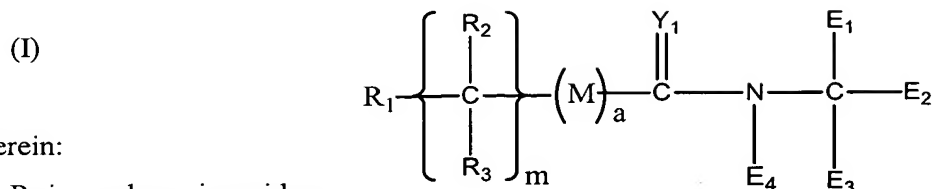


# WHAT IS CLAIMED IS:

1. A compound comprising the formula:



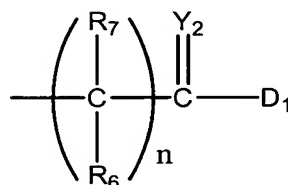
wherein:

$R_1$  is a polymeric residue;

$Y_1$  is O, S or  $NR_4$ ;

$M$  is O, S or  $NR_5$ ;

$E_1$  is



$E_{2,4}$  are independently H,  $E_1$  or

(a) is zero or one;

(m) is zero or a positive integer;

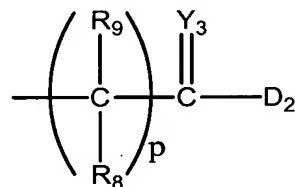
(n) and (p) are independently 0 or a positive integer;

$Y_{2,3}$  are independently O, S or  $NR_{10}$ ;

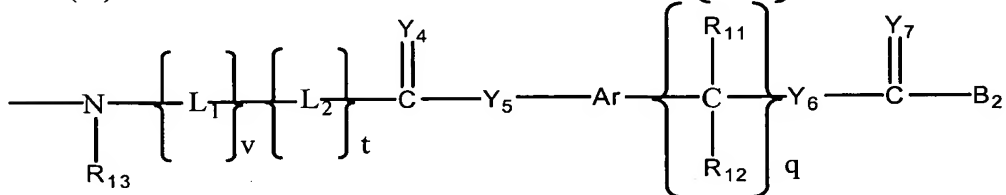
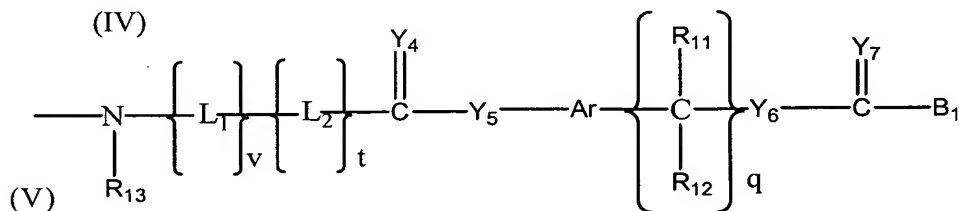
$R_{2-10}$  are independently selected from the group consisting of hydrogen,

$C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

$D_1$  and  $D_2$  are independently OH,



(IV)



or a terminal branching group;

wherein (v) and (t) are independently 0 or a positive integer up to about 6;

(q) is zero or a positive integer;

$L_1$  and  $L_2$  are independently selected bifunctional linkers;

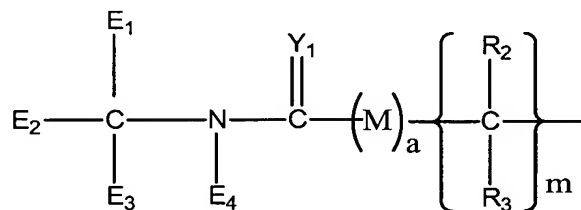
$Y_{4-7}$  are independently selected from the group consisting of O, S and  $NR_{14}$ ;

$R_{11-14}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

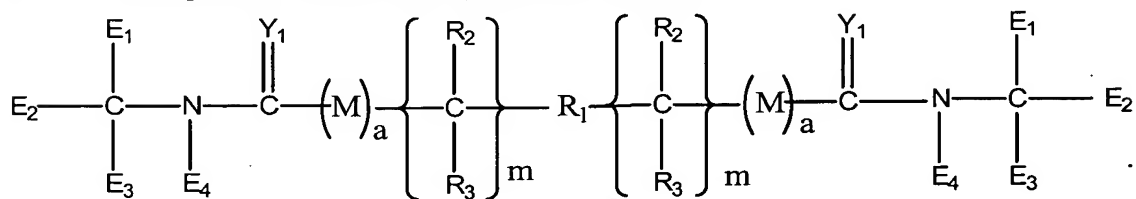
Ar is a moiety which when included in Formula (I) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group;

$B_1$  and  $B_2$  are independently selected from the group consisting of leaving groups, OH, residues of hydroxyl-containing moieties or amine-containing moieties.

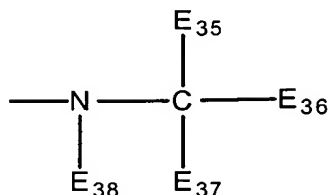
2. The compound of claim 1, wherein  $R_1$  further comprises a capping group A, selected from the group consisting of hydrogen,  $NH_2$ , OH,  $CO_2H$ ,  $C_{1-6}$  moieties and



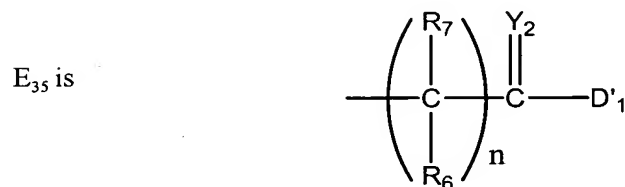
3. A compound of claim 2, comprising the formula:



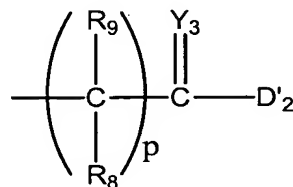
4. The compound of claim 1, wherein said terminal branching group comprises the formula:



wherein



E<sub>36-38</sub> are independently H, E<sub>35</sub> or



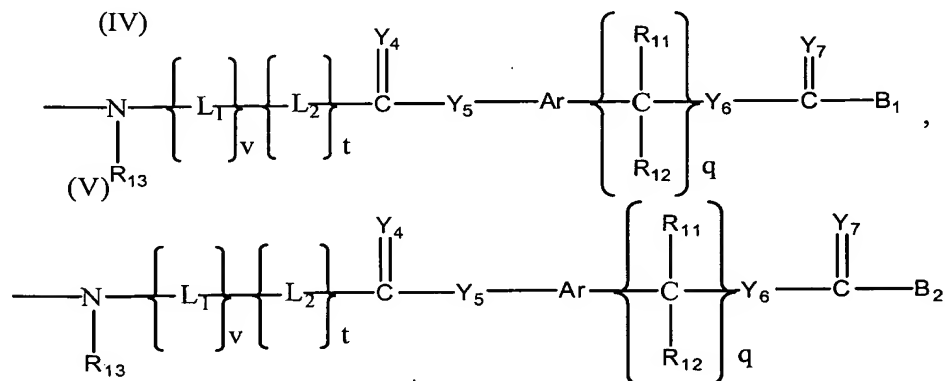
(n) and (p) are independently 0 or a positive integer;

Y<sub>2,3</sub> are independently O, S or NR<sub>10</sub>;

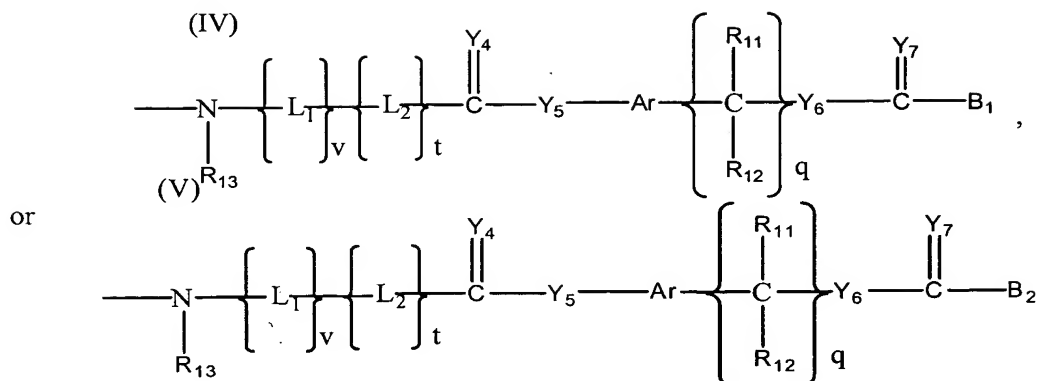
R<sub>6-10</sub> are independently selected from the group consisting of hydrogen,

C<sub>1-6</sub> alkyls, C<sub>3-12</sub> branched alkyls, C<sub>3-8</sub> cycloalkyls, C<sub>1-6</sub> substituted alkyls, C<sub>3-8</sub> substituted cycloalkyls, aryls, substituted aryls, aralkyls, C<sub>1-6</sub> heteroalkyls, substituted C<sub>1-6</sub> heteroalkyls, C<sub>1-6</sub> alkoxy, phenoxy and C<sub>1-6</sub> heteroalkoxy;

D'<sub>1</sub> and D'<sub>2</sub> are independently OH,







5. The compound of claim 3, Y<sub>1</sub> is O.
6. The compound of claim 1, wherein R<sub>1</sub> comprises a polyalkylene oxide residue.
7. The compound of claim 6, wherein R<sub>1</sub> comprises a polyethylene glycol residue.
8. The compound of claim 3, wherein R<sub>1</sub> comprises a polyethylene glycol residue.
9. The compound of claim 6, wherein R<sub>1</sub> is selected from the group consisting of  
 $-\text{C(=Y}_8\text{)}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-A}$ ,  $-\text{C(=Y}_8\text{)}-\text{Y}_9-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-A}$ ,  
 $-\text{C(=Y}_8\text{)}-\text{NR}_{20}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-A}$ ,  $-(\text{CR}_{21}\text{R}_{22})_e\text{-O}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-A}$ ,  
 $-\text{NR}_{20}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-A}$ ,  $-\text{C(=Y}_8\text{)}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-(CH}_2)_f\text{C(=Y}_8\text{)-}$ ,  
 $-\text{C(=Y}_8\text{)}-\text{Y}_9\text{-(CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-(CH}_2)_f\text{Y}_9\text{-C(=Y}_8\text{)-}$ ,  
 $-\text{C(=Y}_8\text{)}-\text{NR}_{20}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-(CH}_2)_f\text{NR}_{20}\text{-C(=Y}_8\text{)-}$ ,  
 $-(\text{CR}_{21}\text{R}_{22})_e\text{-O}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-(CH}_2)_f\text{O}-(\text{CR}_{21}\text{R}_{22})_e\text{-}$ , and  
 $-\text{NR}_{20}-(\text{CH}_2)_f\text{O}-(\text{CH}_2\text{CH}_2\text{O})_x\text{-(CH}_2)_f\text{NR}_{20}\text{-}$

wherein:

Y<sub>8</sub> and Y<sub>9</sub> are independently O, S or NR<sub>20</sub>;

x is the degree of polymerization;

R<sub>20</sub>, R<sub>21</sub> and R<sub>22</sub> are independently selected from among H, C<sub>1-6</sub> alkyls, C<sub>3-12</sub> branched alkyls, C<sub>3-8</sub> cycloalkyls, C<sub>1-6</sub> substituted alkyls, C<sub>3-8</sub> substituted cycloalkyls, aryls, substituted aryls, aralkyls, C<sub>1-6</sub> heteroalkyls, substituted C<sub>1-6</sub> heteroalkyls, C<sub>1-6</sub> alkoxy, phenoxy and C<sub>1-6</sub> heteroalkoxy;

e and f are independently zero, one or two; and

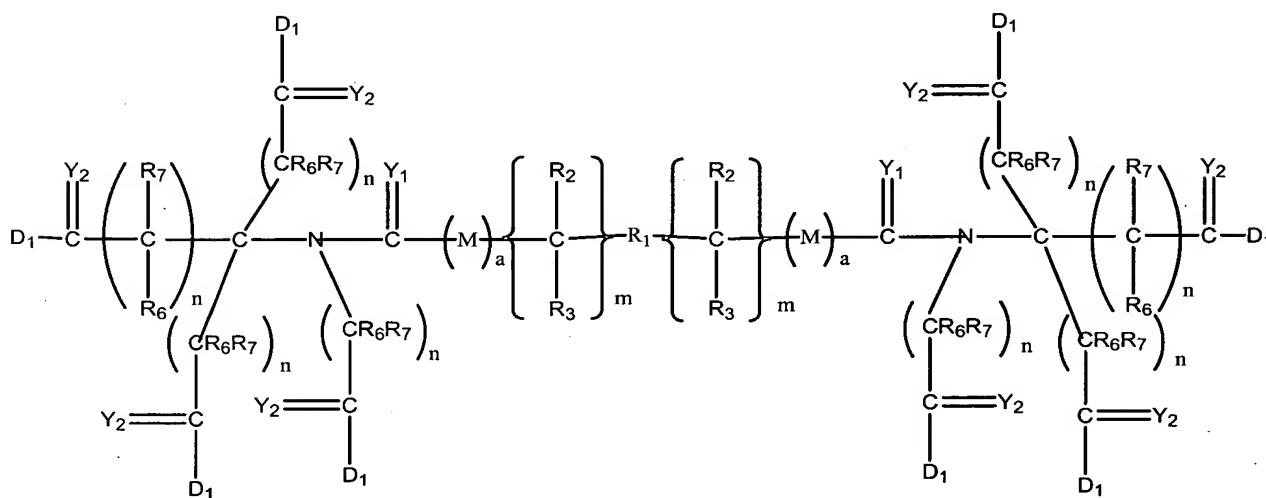
A is a capping group.

10. The compound of claim 9, wherein  $R_1$  comprises  $-O-(CH_2CH_2O)_x$  and  $x$  is a positive integer so that the weight average molecular weight is at least about 20,000.

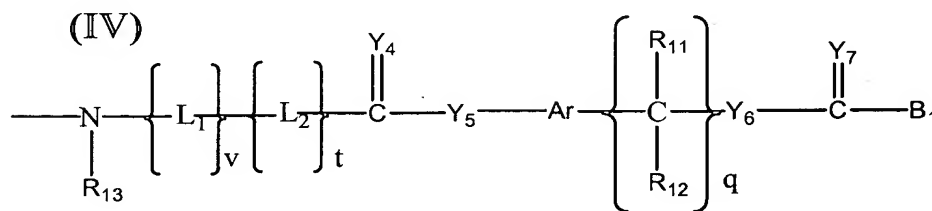
✓ 11. The compound of claim 3, wherein  $R_1$  has a weight average molecular weight of from about 20,000 to about 100,000.

✓ 12. The compound of claim 3, wherein  $R_1$  has a weight average molecular weight of from about 25,000 to about 60,000.

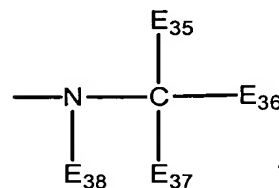
13. A compound of claim 3, comprising the formula



14. The compound of claim 13, wherein  $D_1$  is



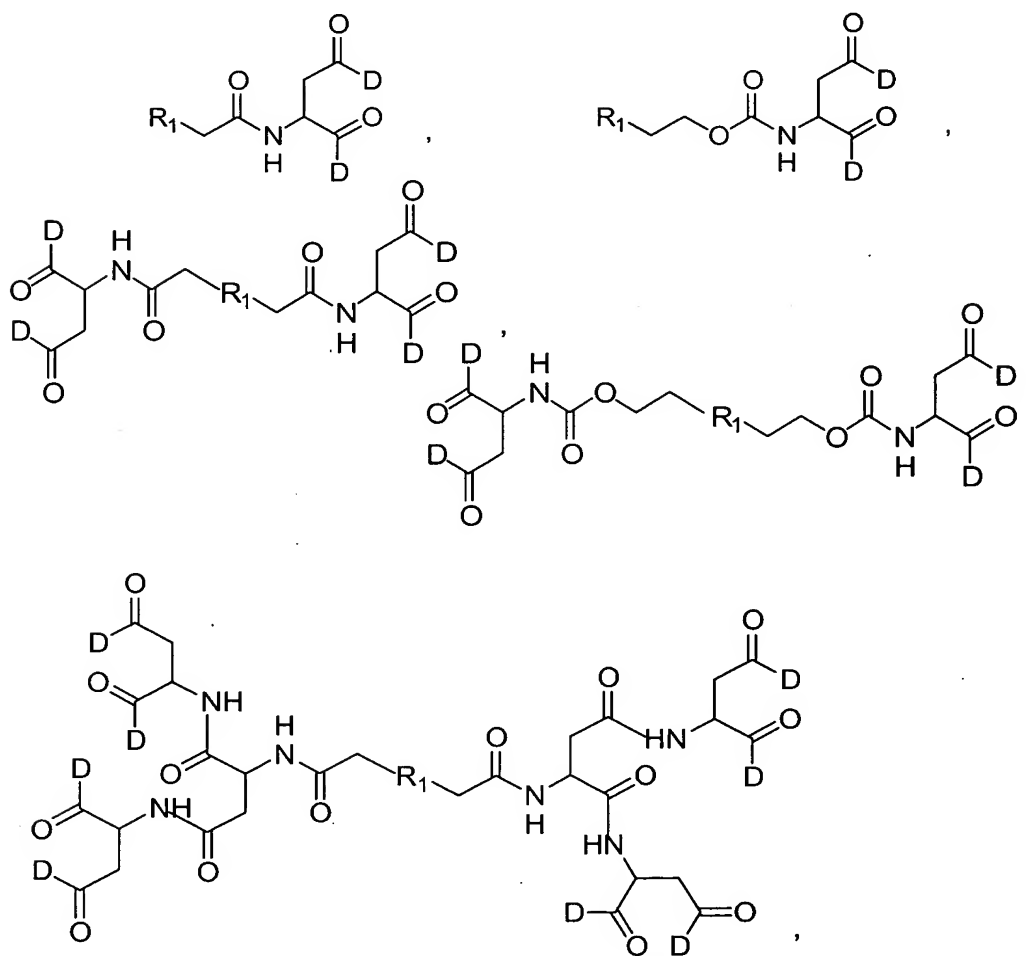
15. The compound of claim 13, wherein  $D_1$  is

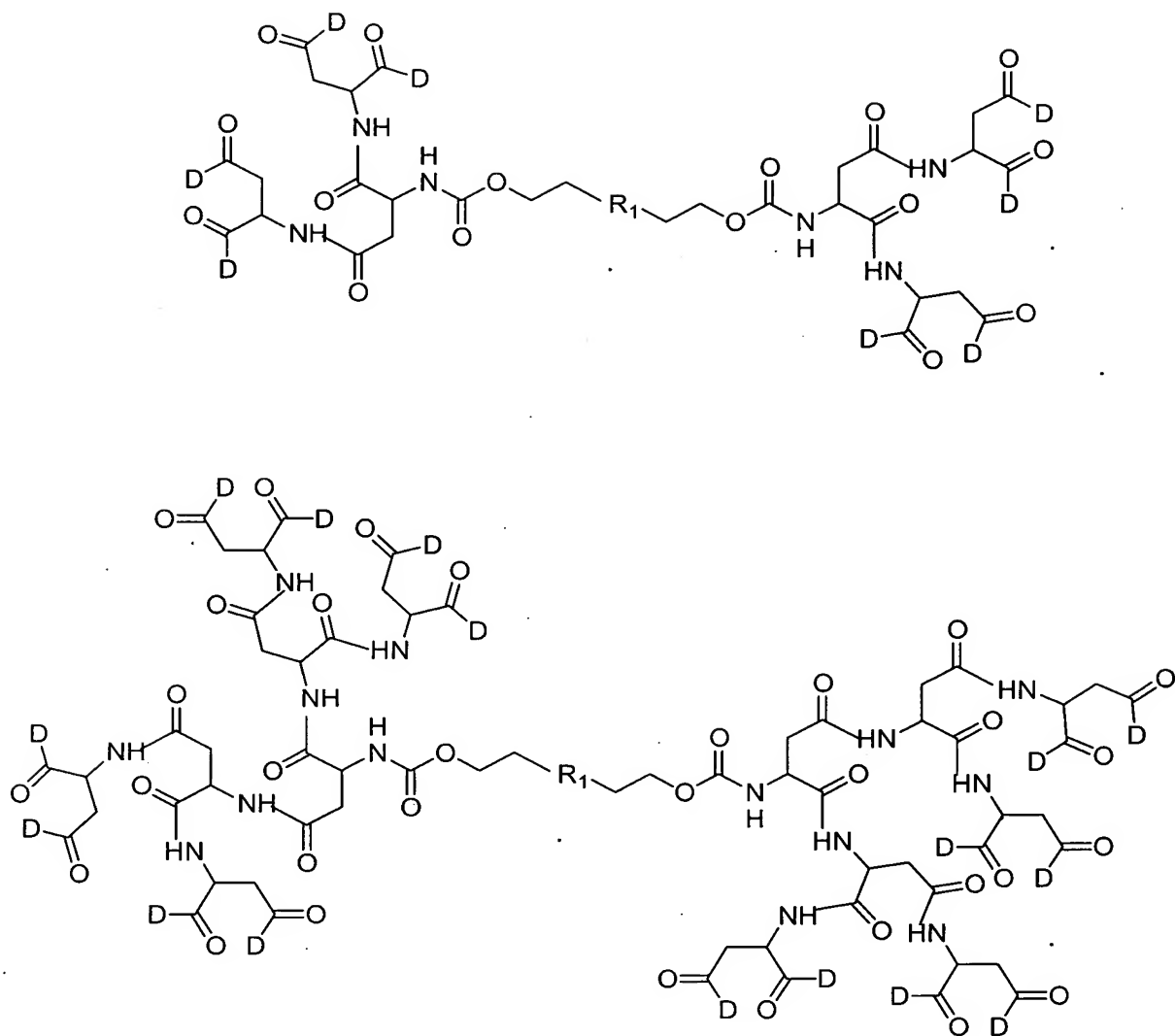


16. The compound of claim 1, wherein  $L_1$  is  $(CH_2CH_2O)_2$ .

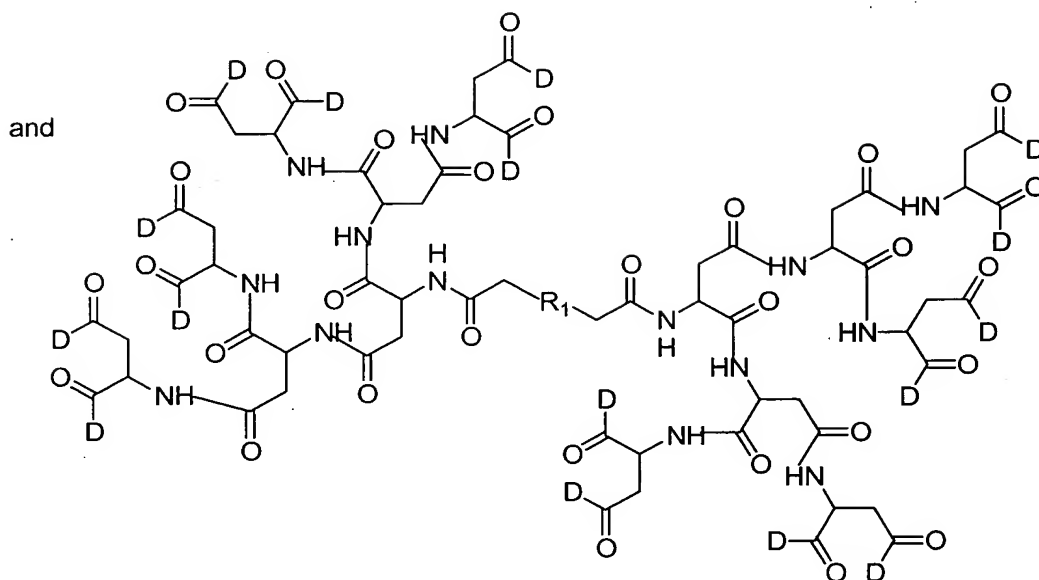
17. The compound of claim 1, wherein  $L_2$  is selected from the group consisting of  $-CH_2-$ ,  $-CH(CH_3)-$ ,  $-CH_2C(O)NHCH(CH_3)-$ ,  $-(CH_2)_2-$ ,  $-CH_2C(O)NHCH_2-$ ,  $-(CH_2)_2NH-$ ,  $-(CH_2)_2NH-C(O)(CH_2)_2NH-$  and  $-CH_2C(O)NHCH(CH_2CH(CH_3)_2)-$ .

18. A compound of claim 1, selected from the group consisting of:

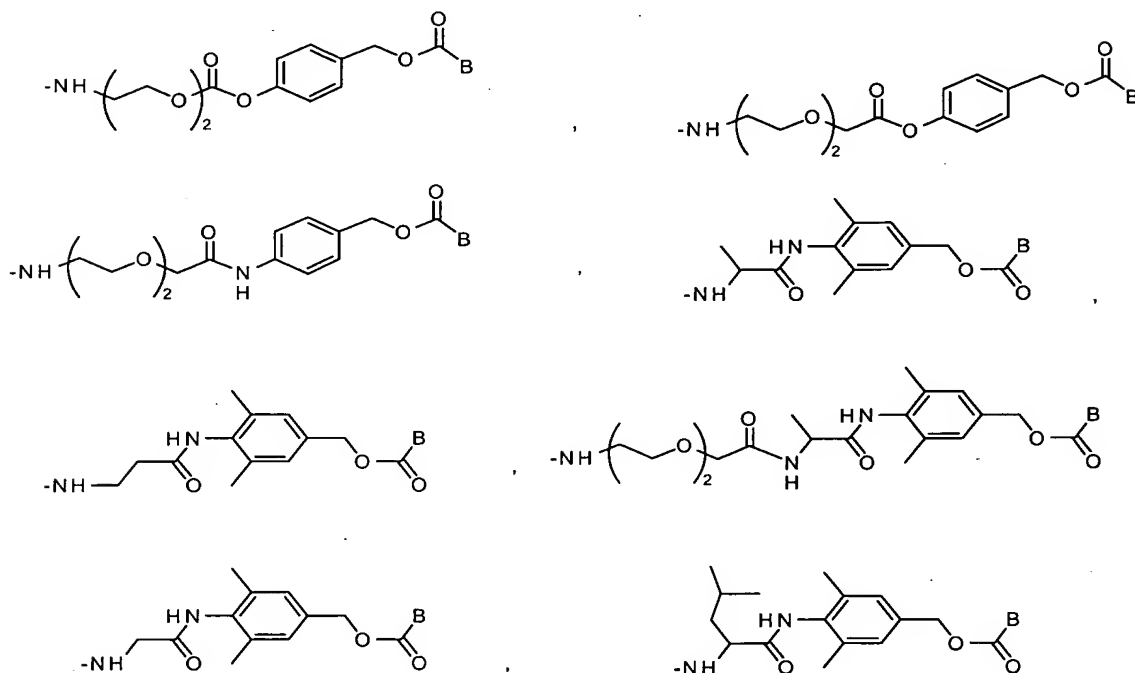


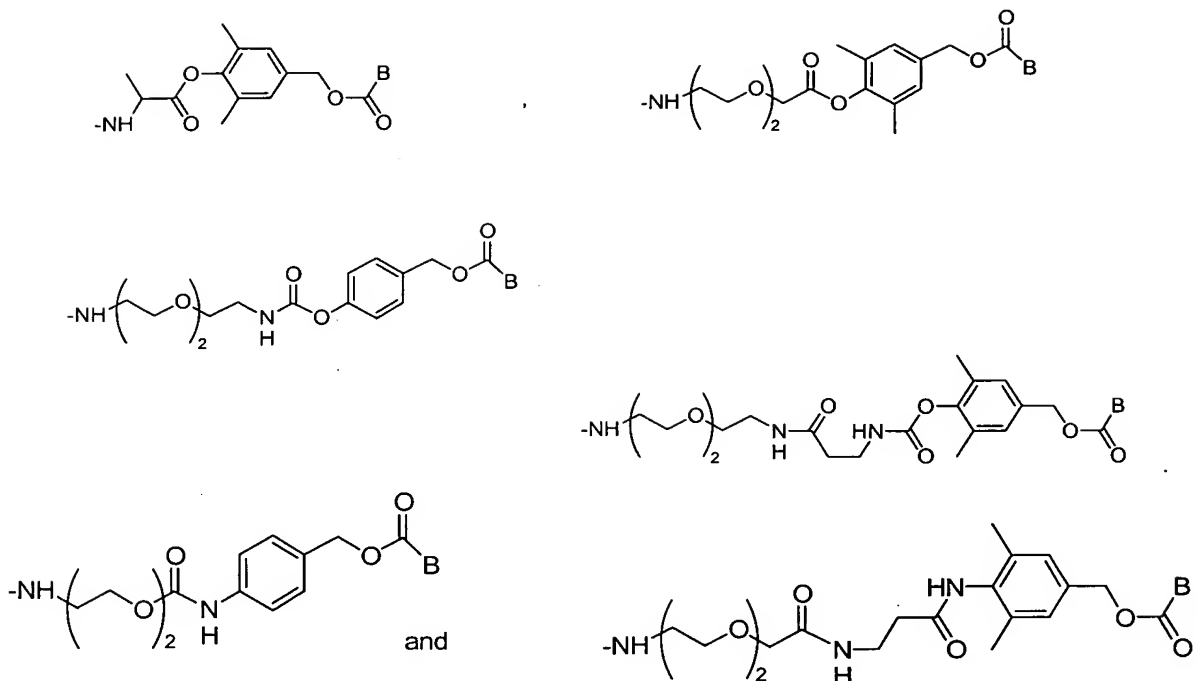






wherein  $R_1$  is a PEG residue and D is selected from the group comprising:





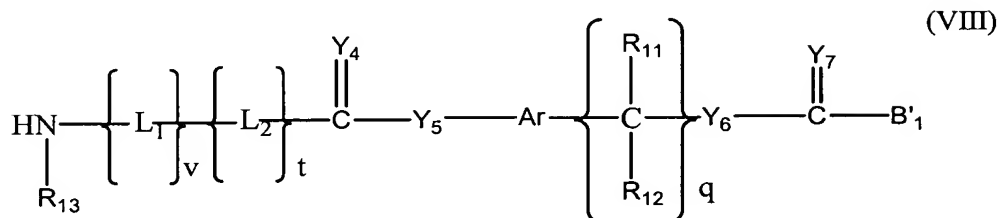
where B is a residue of an amine or a hydroxyl- containing drug.

19. A compound of claim 18, wherein B is a residue of a member of the group consisting of: daunorubicin, doxorubicin; *p*-aminoaniline mustard, melphalan, Ara-C (cytosine arabinoside), leucine-Ara-C, and gemcitabine

20. A method of treatment, comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 1, wherein D<sub>1</sub> is a residue of a biologically active moiety.

21. A method of treatment, comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 18.

22. A method of preparing a polymer conjugate, comprising:  
reacting a compound of the formula (VIII):



wherein (v) and (t) are independently 0 or a positive integer up to about 6;

$\text{L}_1$  and  $\text{L}_2$  are independently selected bifunctional linkers;

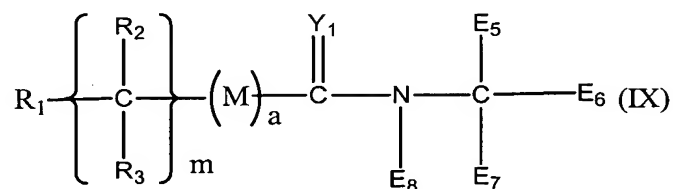
$\text{Y}_{4-7}$  are independently selected from the group consisting of O, S and  $\text{NR}_{14}$ ;

$\text{R}_{11-14}$  are independently selected from the group consisting of hydrogen,  $\text{C}_{1-6}$  alkyls,  $\text{C}_{3-12}$  branched alkyls,  $\text{C}_{3-8}$  cycloalkyls,  $\text{C}_{1-6}$  substituted alkyls,  $\text{C}_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $\text{C}_{1-6}$  heteroalkyls, substituted  $\text{C}_{1-6}$  heteroalkyls,  $\text{C}_{1-6}$  alkoxy, phenoxy and  $\text{C}_{1-6}$  heteroalkoxy;

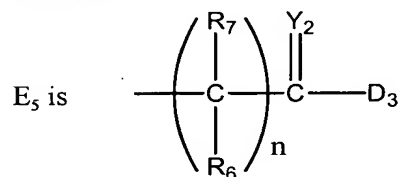
Ar is a moiety which when included in Formula (I) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group; and

$\text{B}'_1$  is a residue of a hydroxyl- or an amine-containing moiety;

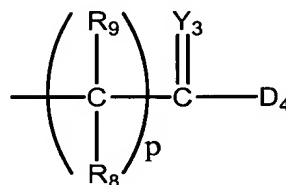
with a compound of the formula (IX):



wherein



$\text{E}_{6-8}$  are independently H,  $\text{E}_5$  or



wherein

$D_3$  and  $D_4$  are independently OH, a leaving group which is capable of reacting with an unprotected amine or hydroxyl or a terminal branching group;

$R_1$  is a polymeric residue;

$Y_1$  is O, S or  $NR_4$ ;

M is O, S or  $NR_5$ ;

(n) and (p) are independently 0 or a positive integer;

$Y_{2-3}$  are independently O, S or  $NR_{10}$ ; and

$R_{2-10}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

under conditions sufficient to cause a polymeric conjugate to be formed.